

WE CLAIM:

1. A method of decoding watermark data from digital data representing a content object, the object including first and second parts conveying first and second different watermarks, the method comprising:

- 5 segregating the digital data into more than two portions;
 selecting a first group of proximate portions and combining same into a first excerpt;
 selecting a second group of proximate portions and combining same into a second excerpt; and
10 separately decoding the first and second excerpts to decode the first and second different watermarks therefrom.

2. A method of decoding watermark data from digital data representing a content object, the object including plural parts conveying plural different watermarks, each of
15 the watermarks including embedded information to facilitate decoding even if the content object is subject to at least one form of affine transformation, the method comprising:

- generating from the digital data a set of data having the embedded information from said watermarks expressed therein;
 discerning first and second transformation information from said set of data, said
20 transformation information related to affine transformations of first and second watermarks;
 processing a portion of the digital data in accordance with the first transformation information to decode the first watermark;
 processing a portion of the digital data in accordance with the second
25 transformation information to decode the second watermark.

3. The method of claim 2 in which said portions include at least some of said digital data in common.

4. The method of claim 2 that includes searching said set of data for relative extrema that helps characterize affine transformation of said watermarks.

5. The method of claim 2 in which the portion of digital data processed in accordance with the first transform information represents some part of the content object conveying the second watermark, wherein the presence of said second watermark does not interfere with decoding of the first watermark since the first transformation information is used in processing.

10 6. A method of decoding watermark data from digital data representing a content object, the object including plural parts each conveying a different watermark, each of the watermarks including a characteristic pattern evident in the Fourier transform domain by which affine transformation of the corresponding part can be discerned, the method comprising:

15 providing blocks of the digital data in the Fourier domain;
accumulating Fourier magnitude data across plural of said blocks;
remapping the accumulated data into a log-polar domain;
providing a summed-grid template representing a summation of Fourier
magnitude data corresponding to said plural characteristic patterns, represented in said
20 log-polar domain;

analyzing the remapped accumulated data in accordance with said summed-grid template to discern candidate affine states;

for at least some of said candidate affine states, determining the characteristic pattern to which each corresponds; and

25 attempting to decode a watermark from a portion of the digital data in accordance with a first of said candidate affine states and a characteristic pattern determined to correspond thereto.

7. The method of claim 6 that includes attempting to decode a watermark from a portion of the digital data in accordance with a second of said candidate affine states, and a characteristic pattern determined to correspond thereto.

5 8. The method of claim 7 in which the characteristic pattern corresponding to said first affine state is determined to be different than the characteristic pattern corresponding to the second affine state.

10 9. A method of encoding a digital content object with a watermark that represents both payload data and calibration data, comprising:

 defining a grid signal comprising a plurality of components in the Fourier domain;
 setting the polarities of said components in accordance with payload data to be represented thereby; and

15 combining said grid signal with the digital content object to digitally watermark same;

 wherein affine transformation of the digital content object can be discerned from affine transformation of the grid signal, and the payload can be discerned from the polarities of the grid signal components.

20 10. The method of claim 9 in which the watermark includes other components in addition to those of which the grid signal is comprised, said other components serving to convey additional payload data.

25 11. The method of claim 9 in which the payload data represented by the polarities of said grid signal components serves to convey protocol information.